

(1) DISCUSS COMMUNICABLE DISEASES UNDER THE FOLLOWING HEADINGS;

- \* DEFINITION
- \* CAUSATIVE AGENTS
- \* MODES OF TRANSMISSION
- \* METHODS OF PREVENTION AND CONTROL

#### DEFINITION:

Communicable diseases are illnesses caused by infectious agents that can be transmitted from one person to another or from animals to humans. These diseases can spread through various routes, affecting individuals and populations.

#### CAUSATIVE AGENTS

The causative agents of communicable diseases include a variety of pathogens such as:

- \*BACTERIAL:Single-celled organisms that can cause diseases like tuberculosis, strep throat, and bacterial pneumonia.
- \*VIRUSES:Tiny infectious agents that replicate only inside living cells, responsible for diseases such as influenza, HIV/AIDS, and COVID-19.
- \*FUNGI:Organisms that can cause infections like athlete's foot and candidiasis.
- \*PARASITES:Organisms that live on or in a host and can cause diseases like malaria, giardiasis, and toxoplasmosis.

#### MODES OF TRANSMISSION

Communicable diseases can spread through several means, including:

- \*DIRECTS CONTACT:Touching, kissing, or sexual contact with an infected person.
- \*INDIRECTS CONTACT:Transmission through contaminated surfaces or objects (fomites).
- \*AIRBORNE TRANSMISSION:Pathogens that remain suspended in the air can be inhaled, as seen with tuberculosis or measles.
- \*VECTOR-BORNE TRANSMISSION:Insects or animals (vectors) transmit pathogens, as seen with malaria (via mosquitoes) and Lyme disease (via ticks).
- \*FOOD AND WATERBORNE TRANSMISSION:Consuming contaminated food or water can lead to diseases like cholera and hepatitis A.

#### METHOD OF PREVENTION AND CONTROL

Preventing and controlling communicable diseases involves various strategies:

- \*VACCINATION:Immunizations can prevent diseases like measles, polio, and influenza.
- \*HYGIENES PRACTICES :Regular handwashing, using sanitizers, and maintaining cleanliness can reduce the spread of pathogens.
- \*QUARANTINE AND ISOLATION:Separating infected individuals to prevent further transmission

during outbreaks.

\*SAFE FOOD AND WATER PRACTICE:Ensuring food safety and access to clean water to prevent foodborne and waterborne diseases.

\*PUBLIC AWARENESS AND EDUCATION:Informing communities about transmission modes and preventive measures to promote healthy behaviors.

## (2) EXPLAIN THE TERMS OF ENDEMIC, EPIDEMIC, AND PANDEMIC GIVING EXAMPLES

### \*ENDEMIC:

An endemic disease is consistently present within a specific geographic area or population. The prevalence remains relatively stable over time, with a predictable pattern.

Example:Malaria is endemic in parts of sub-Saharan Africa, where there is a steady number of cases year-round due to the local presence of the malaria-causing parasite and its mosquito vectors.

### \*EPIDEMIC:

An epidemic refers to a sudden increase in the number of cases of a disease above what is normally expected in a specific area or population. It indicates a higher than usual spread of the disease in a short time.

Example:The Ebola outbreak in West Africa between 2014 and 2016 was an epidemic, as it saw a dramatic surge in cases that exceeded normal levels for that region.

### \*PANDEMIC:

A pandemic occurs when an epidemic spreads over multiple countries or continents, affecting a large number of people. It typically involves a new infectious agent to which most people do not yet have immunity.

Example:The COVID-19 pandemic, which began in late 2019, spread globally, affecting millions of people across various countries and leading to widespread health, economic, and social impacts.

## (3) DEFINE AND DISTINGUISH BETWEEN INCIDENCE AND PREVALENCE.EXPLAIN THEIR IMPORTANCE IN EPIDEMIOLOGY WITH EXAMPLES.

### \* INCIDENCE

Incidence refers to the number of new cases of a disease or health condition that occur in a specified population during a given time period. It is often expressed as a rate, calculated by dividing the number of new cases by the population at risk during that time.

EXAMPLE:If a town has 1,000 residents and 50 new cases of flu are reported in one flu season, the incidence rate of flu would be 50 cases per 1,000 residents over that season.

### \* PREVALENCE

Prevalence measures the total number of existing cases (both new and pre-existing) of a disease or

health condition in a specified population at a given point in time. It is also expressed as a rate, calculated by dividing the total number of cases by the total population.

EXAMPLE: If in the same town of 1,000 residents, there are 100 people currently living with diabetes at a specific time, the prevalence of diabetes would be 100 cases per 1,000 residents.

## DISTINCTIONS

### 1. NATURE OF CASES:

- \*INCIDENCE: Focuses solely on new cases during a specific time period.

- \*PREVALENCE: Includes all cases, both new and existing, at a specific point in time.

### 2. TIME FRAME:

- \*INCIDENCE: Requires a defined time period to assess new cases.

- \*PREVALENCE: Can be assessed at a particular moment or over a specified duration.

### 3. UTILITY:

- \*INCIDENCE: Useful for studying the risk of developing a disease and identifying potential causes.

- \*PREVALENCE: Helpful for understanding the overall burden of a disease in a population and planning health services.

## IMPORTANCE OF EPIDEMIOLOGY

### \*INCIDENCE:

- Helps in identifying trends and outbreaks. For example, a sudden increase in incidence of a specific infectious disease can indicate an outbreak requiring immediate public health intervention.

### \*PREVALENCE:

- Assists in resource allocation and healthcare planning. For instance, high prevalence of chronic diseases like hypertension in a community can lead to increased healthcare services and preventive measures.

## (4) DESCRIBES THE MEASURE USED IN CONTROLLING COMMUNICABLE DISEASES AT THE COMMUNITY LEVEL

Controlling communicable diseases at the community level involves a combination of strategies that focus on prevention, education, and timely response to outbreaks. Here are some key measures used:

### 1. VACCINATION PROGRAMS

- \* DESCRIPTION: Immunization campaigns to protect individuals and communities from vaccine-preventable diseases.

- \* IMPLEMENTATION: Community-based vaccination drives, school immunization programs, and outreach to underserved populations.

## 2. HEALTH EDUCATION AND PROMOTION

\* DESCRIPTION: Educating the community about disease prevention, hygiene practices, and healthy behaviors.

\* IMPLEMENTATION: Workshops, seminars, informational pamphlets, and social media campaigns to raise awareness about communicable diseases and their prevention.

## 3. SURVEILLANCE AND MONITORING

\* DESCRIPTION: Ongoing collection and analysis of health data to detect outbreaks and monitor disease trends.

\* IMPLEMENTATION: Reporting systems for healthcare providers, community health surveys, and collaboration with public health agencies to track incidences of diseases.

## 4. HYGIENE AND SANITATION MEASURES

\* DESCRIPTION: Promoting practices that reduce the spread of infections through improved sanitation and personal hygiene.

\* IMPLEMENTATION: Community clean-up campaigns, provision of clean water and sanitation facilities, and education on handwashing and food safety.

## 5. QUARANTINE AND ISOLATION

\* DESCRIPTION: Separating individuals who are infected or exposed to a communicable disease to prevent further transmission.

\* IMPLEMENTATION: Designating facilities for quarantine, monitoring health of individuals during isolation, and providing support services to those affected.

## 6. VECTOR AND CONTROL

\* DESCRIPTION: Reducing the population of disease-carrying vectors (e.g., mosquitoes, ticks) to decrease transmission.

\* IMPLEMENTATION: Community spraying programs, promoting the use of insect repellent, and encouraging the removal of standing water to reduce breeding sites.

## 7. ACCESS TO HEALTHCARE SERVICES

\* DESCRIPTION: Ensuring that community members have access to healthcare for diagnosis, treatment, and preventive services.

\* IMPLEMENTATION: Establishing clinics, mobile health units, and telehealth services to reach remote or underserved populations.

## 8. COORDINATION WITH PUBLIC HEALTH AUTHORITIES

\* DESCRIPTION:Collaborating with local and national health agencies for effective disease control and response.

\* IMPLEMENTATION:Joint planning and response efforts, sharing data and resources, and participating in public health campaigns.

## 9. COMMUNITY ENGAGEMENT

\* DESCRIPTION:Involving community members in planning and implementing disease control measures.

\* IMPLEMENTATION:Forming community health committees, engaging local leaders, and fostering partnerships with community organizations.

(5) WRITE SHORT NOTE ON THE FOLLOWING:

(A) EPIDEMIOLOGICAL TRIANGLE

(B) VEHICLE-BORNE TRANSMISSION

(C) POINT PREVALENCE AND PERIOD PREVALENCE

(A) EPIDEMIOLOGICAL TRIANGLE

The epidemiology triangle is a model that helps in understanding the interaction between the three key elements involved in the spread of infectious diseases: the agent, the host and the environment.

\* AGENT:The pathogen (bacteria, virus, parasite, etc.) that causes the disease.

\* HOST:The individual or population at risk of infection, whose characteristics (age, sex, genetics, immunity) can influence susceptibility.

\* ENVIRONMENT :The external factors that affect the agent and host, such as living conditions, climate, and sanitation.

(B) VEHICLE-BORNE TRANSMISSION

Vehicle-borne transmission refers to the spread of infectious agents through contaminated inanimate objects or materials known as vehicles. These vehicles can include:

\* FOOD:Contaminated food can transmit pathogens, leading to outbreaks of illnesses such as salmonella or E. coli.

\* WATER:Drinking or using contaminated water can spread diseases like cholera or hepatitis A.

\* FOMITES:Inanimate objects like doorknobs, utensils, or medical equipment can harbor pathogens and facilitate transmission when they come into contact with

(C) POINT PREVALENCE AND PERIOD PREVALENCE

POINT PREVALENCE

Point prevalence refers to the proportion of a population that has a specific disease or condition at a particular point in time. It is calculated by dividing the number of existing cases by the total population at that specific time.

\* EXAMPLES: If a community of 1,000 people has 50 individuals with diabetes on a specific date, the point prevalence of diabetes would be 5% ( $50/1,000$ ).

#### PERIOD PREVALENCE

Period prevalence measures the proportion of a population that has a disease or condition during a specified period, including both new and existing cases. It is calculated by dividing the total number of cases during that period by the average population at risk.

\* EXAMPLES : If over a year, a community of 1,000 people had 70 individuals with diabetes at some point, the period prevalence for that year would be 7% ( $70/1,000$ ).